

The organization of

# MACHINE GUNS

their

## TACTICAL USES

WITH NOTES ON TRAINING

By *V. H. Jackson,*  
*York and Lancaster Regt.*



LONDON.

**FORSTER GROOM & Co. Ltd.**

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V. A. JACKSON

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## PREFACE

By MAJOR-GENERAL SIR HENRY RAWLINSON, Bart., C.B., C.V.O.

THE data collected and reproduced in this little book will be of value to all those interested in the development of machine guns. That they will play a vastly more important part in the wars of the future than they have done in the past is generally admitted, but the lines in which the development will take place and the principles of their tactical employment, have yet to be confirmed by the experience of war.

The sustained rattle of a machine gun has an immense moral effect in proportion to the actual damage which it inflicts, and to make full use of this moral power it is desirable that it should come as a surprise when the success or failure of the combat hangs in the balance. Hence both in attack and defence it will probably be wise to reserve a proportion of the machine guns available, for use at close and decisive ranges where the terrain favours their being brought into action as a surprise.

A point which the writer has touched on and upon which I should like to lay stress, is the fact that when massed in batteries they to some extent lose their moral effect. When the

rapid fire of 8 guns is at full blast the rattle of the guns is lost in the roar of the battery ; so that except in the close defence of defiles such as the ditches of a fortress or the defence of an important bridge, the dispersion of the guns and the concentration of their fire will usually give the best result.

Moreover dispersion favours concealment, and as the present tripod mounting enables the gun, if well placed, to be almost completely hidden, there should be small risk of its discovery by the opposing artillery.

On the other hand the battery formation has many advantages. For purposes of training, discipline, supervision and general efficiency it is essential that guns should be organised in batteries of eight. The instruction can be carried out far more thoroughly than in pairs, but it must never be forgotten that for tactical work, each group of two or four guns, must be capable of independent action either by itself or in conformity with the general dispositions of the battery or group of batteries. This requires a high standard of training for the N.C.O.'s commanding pairs of guns, and it is only by careful instruction under a battery commander that this object can be attained.

If we glance at the equipment now extant in our service, we find, I think, that it is capable of improvement. The existing wagon in



which the gun and ammunition is carried, does not favour concealment nor is it well adapted to countries deficient of roads. All the Japanese machine guns, and they have largely increased their numbers since the war in Manchura, are carried on pack mules, and in the manœuvres of 1909 these guns were freely used right up in the firing line of the attack, to which position they had been skilfully conducted without the pack mules being exposed to fire. To do this with the wagon now in the British service would not have been possible, though if the draft animal which draws the wagon carried a pack saddle, capable of carrying the gun and tripod, good results would be attained.

Similarly during the French Cavalry Manœuvres of 1909, the use made of machine guns was most striking. The gun itself (called the St. Etienne) which is air cooled and has three rates of fire with ball and blank, is mounted on a limbered carriage and drawn by four horses. Whenever the opposing regiments or brigades joined issue in the charge, the machine guns were always on the spot pouring a rapid fire from a flank for a minute or so just before impact took place, and there can be no question that such fire would have been very effective.

It is abundantly clear that all armies are paying increased attention to their machine

guns, impressed as they have all been by the reports of their effect, both morally and physically, at the battle of Mukden. It is a subject which we require to carefully study, for other nations are improving the mechanisms, and mobility, of their weapons and training their detachments to the value and importance of invisibility. It is by no means certain that the best type of gun has yet been invented, but there are several that from the point of view of handiness, lightness and equipment, are superior to our present maxim. The shortcoming from which we suffer most is our inability to fire rapid with blank ammunition, for it is one which renders the training of both officers and detachments extremely difficult, and deprives Machine Guns of the power of making themselves properly appreciated at manœuvres. Efforts are being made to overcome this disadvantage but these efforts have not yet been crowned with success.

I have referred to the above points as they may, perhaps, be of interest to readers of this valuable little book, the contents of which are worthy of careful study by all infantry and artillery officers.

HENRY RAWLINSON.

MARCH, 1910.

## INTRODUCTION

The objects of this small book are :—

- (1) To enumerate some of the difficulties which stand in the way of a Machine Gun Officer.
- (2) To combine in a single pamphlet all the information found in the official Text Books bearing on Machine Guns.
- (3) To describe some of the methods of training men in Machine Gun Work which the writer has tried and found to give good results.

In compiling this, reference has been made to the following Official Books :—

Infantry Training.  
War Establishments.  
Field Service Manuals.  
Musketry Regulations.  
Army Order of May, 1909.  
Field Service Regulations, Part 1.



## CHAPTER I

IN the first place some definite system of training and organization is necessary in order that efficient Sections may be obtained.

One might even go further and advocate Machine Guns forming a separate arm of the service.

At present different Battalions must have different methods of training and organization, which fact causes a great want of uniformity when sections are brigaded.

Apparently the importance of Machine Guns is only commencing to be realised and consequently it is difficult to obtain authentic information from the few most recent Campaigns in which use has been made of them. Possibly it would be fairer to say that the proper use to be made of Machine Guns has only recently been understood.

Many ideas have recently been put forward to place this arm on a more perfect footing as regards organization and training. As the training is carried out at the present time, the following points should receive attention :—

(I). More than six men of a Battalion at

home should be exempt from the drafts abroad. (Could not a complete Section of 12 privates be retained)? otherwise it is not until the latter end of the training season that Battalions can have a properly trained Section.

(II). Some other method of using the guns on manœuvres than firing blank ammunition would be of advantage. At present the use of blank ammunition causes a certain amount of damage to the guns and necessitates the replacing of parts. The main point being to give Umpires an opportunity of observing their position and judging the results their fire would effect. Some sort of Disc has, I believe, been used to show their position, but not been found satisfactory.

(III). At present there is very little opportunity at home stations for practising the teams in pack loading, which might have to be used in some countries.

(IV). More facilities for carrying out field practices under more serviceable conditions would be of advantage. At present the usually poor results obtained in these, appear due chiefly to the fact of their being carried out before the men are properly trained to fire the gun—which requires a larger experience than can be expected from the majority of men available. In any case Field Practices should never be fired until Parts I., II., and III. of Table C. are concluded.

(V). If, on manœuvres, machine gun sections, or batteries when brigaded, could be made more of a complete unit, it would be of great advantage. For instance, each Section or Battery with its own cart to carry rations, cooking utensils, forage, blankets, &c.—it is unlikely that they will always be in close proximity to their own unit, especially when brigaded. The fact that on mobilization, each section has one S.A.A. Cart with it, calls for more practice with that vehicle—as judgment would be required in deciding how far this would accompany the limbered wagon. When brigaded, an Officer might be in charge of the four S.A.A. Carts.

(VI). Some single instrument range finders would be of advantage and also one mounted man to act as a signaller orderly.

More and varied kinds of entrenching tools would be of use.

(VII). At present the mobilization ammunition for machine guns is packed in boxes "Charger loaded." This would appear to be rather a disadvantage on service, when it became necessary to fill the belts.

(VIII). If machine guns are not to become a separate arm of the Service, more attention should be paid to their organization and training in order to obtain uniform methods and properly trained Sections.

(IX). At present it is very noticeable that

no competition for Machine Guns is ever arranged at Army Rifle Meetings. If this were done it would encourage the men and improve the shooting.

(X). Some badge of distinction might be given to first class gunners, in order to make the work more popular and on the same principle as the badge given to scouts and signallers.

(XI.) It would be of great advantage and enable machine gun men to be more thoroughly acquainted with their guns if when moving from one Station to another, Regiments could take machine guns with them.

(XII). So that the men of the team might not be hampered when moving the gun and tripod, etc., it would appear sufficient for three men of each team only to carry rifles. The other three men's rifles might be fastened to limber by a clip and strap on the same principle as those of the R.E. Companies are.

The following suggestion is made for proposed alteration of G.S. Limbered Wagon (*vide* Plate I.):—

(I). That each portion should be made of more substantial wood and be slightly longer.

(II). That the division of each limber should be lengthways from front to rear (exactly opposite to the present pattern).

(III). That the front portion be fitted up for guns, tripods, eight ammunition boxes,



and spare part box only—with seats for four men at the back of the front portion of the limbered wagon.

(IV). That the hind portion be used for packs, blankets, remainder of ammunition boxes, sand-bags, etc.

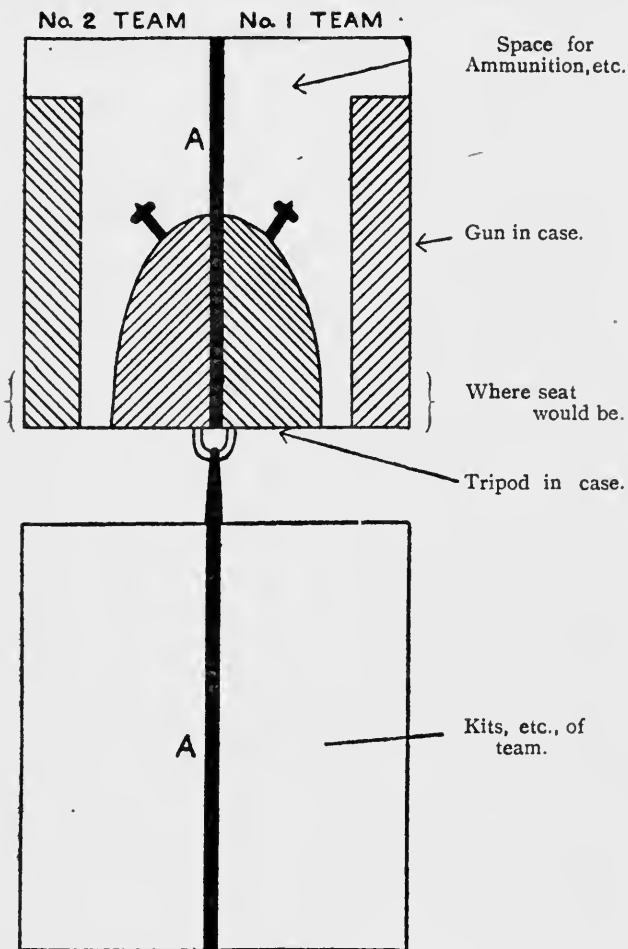
(V). That some fastenings should be made on the side of the limber for six rifles and underneath for entrenching tools and water drum.

(VI). That some kind of sledge be provided for each gun, after the same pattern as that used in the German Army (this might be carried under the limber).

By this means the limber could be separated and the front portion gallop or trot off nearer to point of action if necessary and be complete with guns, tripods, and ammunition.

# PLATE I.

ROUGH PLAN OF LIMBERS SEEN FROM ABOVE.



A shows division board in limbers.

## CHAPTER II

### ORGANIZATION IN THE BATTALION

As the Hand-Book of the Maxim Machine Gun 1907 does not give the composition of a Section with Tripod Mounting Carried in Limber G.S., the following is taken from War Establishments :—

#### MACHINE GUN SECTION (INFANTRY BATTALIONS.)

- 1. (Subaltern) Officer.
- 1. Sergeant.
- 1. Corporal.
- 12. Privates.
- \*2. Drivers. (1st Line Transport), with 4 horses (draught) and 1 riding.
- \*1. G.S. Limbered Wagon for two guns, tripod and ammunition.
- \*1. S.A.A. Cart.

\*Note :—One driver for each.

(*By Section*, I mean One Sergeant, One Corporal, and Twelve Privates.)

(*By Team*, I mean one of Six Privates.)

The following rules appear necessary in selection of men for a Machine Gun Section:—

- (1). The Officer should with the assistance

of Company Commanders personally select the men he requires.

(2). Not more than three men should be taken from one Company.

(3). Once selected for Machine Gun Work no man should be taken for any other course or employment without the Machine Gun Officer's sanction.

(4). Only the spare teams (*i.e.*, 2nd Class Gunners) should return to regimental duty when trained.

It is necessary here to explain the kind of men most suitable for machine gun work, *i.e.*, one fulfilling the following :—

A man of good physique, hard working and quick to learn, a bit of a mechanic, with good eyesight, a good shot and who has fired recruits' and trained soldiers' courses, one fond of animals, and who has lived in the country.

Assuming that men possessing the necessary qualifications are available, the Machine Gun Officer should select early in the year, after the trooping season, his Sergeant (a trained man), Corporal and twelve Privates (as many trained men as possible), taking six men from each half battalion, making two teams, one for each gun.

Having selected these, he should again take another Sergeant, Coporal and twelve more Privates who will compose the spare section. This should be done in a similar way.

At the same time two drivers should be selected with the help of the Transport Officer.

One man should be permanently in charge of Machine Gun and Parts, who might receive some small extra pay (say 2s. 6d. a month).

From the Field Service Manuals the following are to be carried in the G.S. Limbered Wagon:—

#### FORE PORTION

- 10 Sand-bags (on mobilization).
- 1 Gun complete in leather case.
- 1 Tripod with hood.
- 1 Bar carrying tripod.
- 14 Belts in boxes.
- 1 Spare part box (including muzzle attachment, belt plug, and reflector).
- 2 Cans lubricating No. 9.
- 2 Cans half-pint lubricating.
- 1 Can case.
- 1 Cleaning rod and spare barrel in case.
- 6 Yards of Flannelette (can be carried in spare part box).
- 1 Crosshead joint pin (attached to tripod).
- 1 Elevating joint pin (attached to tripod).
- 1 Shovel
- 1 Pick.

#### HIND PORTION

As above and one saddle blanket for the off horse (on mobilization).

As I know of no official way of packing the limbered wagons now in use the following is suggested :— See Plate II.

Standing in rear and facing wagon (having taken out centre division board), place gun in case under seat and push forward against left side of wagon, place on end, along the right side of wagon, the packs of the team (7) including either Sergeant's or Corporal's. In the centre can be placed the fourteen ammunition boxes and spare part box. Finally on the right side near the tail board lay in tripod hood, the spare barrel and cleaning rod case to be placed between ammunition boxes and packs. On top of the packs and fixed to them will be the rifles of Nos. 1 and 2. It is impossible for these two men to move gun quickly from limber if their rifles are slung, but they must be securely fastened to packs. The oil can case may be fastened on to the seat at the back of hind portion. The drag ropes are carried attached to the right side of limber with straps.

Packed as above it is easy to draw out gun and mounting without upsetting the remainder of contents.

The water-bag should be placed in front part of each portion.

*Note :—*The drum for carrying water, can be tied under the limber, though I consider that something in the "Mussuk" line would be more practical.

# ORGANIZATION OF MACHINE GUNS

## PLATE II.







The blanket for horse can be placed over the rifles to prevent damage, (though personally I have found cloth cases for the rifles are most useful).

The tools can be fixed under the wagon fastened to the bar joining the two portions and the sandbags wrapped round to keep them in place. There is still plenty of room for Blankets, W.P. Sheets, and rations, (if at any time it is found necessary to carry these).

### AMMUNITION AND HOW CARRIED

Each Machine Gun is provided with sixteen belts, each belt holding 250 rounds.

Only fourteen belts are carried filled in the limbered wagon for each gun. One S.A.A. Cart accompanies each machine gun section, and in it are carried four filled belts (250 each) giving 1,000, and 15,000 rounds in boxes of 1,000 rounds each. Also eight ammunition bags and one Saddle blanket for off horse.

With Field Artillery Brigade Ammunition Columns are carried 10,000 rounds for each gun.

With Divisional Ammunition Columns are carried 10,000 rounds for each gun.

This gives a total of 31,500 in the field for each Machine Gun.

(For each Section.)

The Limbered Wagon carrying	7,000	rounds.
The S.A.A. Cart carrying . . . .	16,000	„
The Field Artillery Brigade		
Ammunition Column . . . . .	20,000	„
The Divisional Ammunition		
Column . . . . .	20,000	„
	<hr/>	
Total . . . . .	63,000	„
	<hr/>	
.....or 31,500 rounds for each gun.....		
.....		.....
.....		.....

## CHAPTER III

### METHOD OF TRAINING IN BATTALION DURING THE TRAINING SEASON

The following system of training Machine Gun Sections is suggested :—

As soon as Company Training starts, a Company should be formed under the Machine Gun Officer consisting of his Machine Gun Section and Spare Section, giving him :—

- 2 Sergeants.
- 2 Corporals.
- 24 Privates.
- 4 Drivers.

This is very nearly equal to most Companies at home on Company Training.

This Company should, for thirty days, be trained in Machine Gun Mechanism and tactics, with the addition of other Company Training Work. The Officer is responsible that the Spare teams when returning to their Companies are fully trained in work in Company Training.

During this time, the sections should be trained in the following :—

- (a). Mechanism, Moving Gun into Action,

Defects and Remedies, Judging Distance, Range Finding, Semaphore, Grooming and Harnessing Horses, First Aid to Wounded, Cooking, Pitching of Tents, Digging Trenches and Pits, Scouting, Writing Reports, Map Reading, Visual Training, Care of Gun, Night Operations, Simple Veterinary Instruction, Bridging, Provision of Cover, Supply of Ammunition in field, with lectures on Power of Gun, equipment in Field, Mobilization, Tactical Uses, Concealment of Gun especially when Moving into Action.

In addition to this, fire yearly course, Table C., with proper Machine Gun Section. Having finished this, the Spare Section should return to their Companies.

The proper Machine Gun Section should now be ready to attend a course of Brigade Training under Brigade Machine Gun Officer which might occupy a fortnight to one month.

Then when Battalion Training commences, the Machine Gun Section would be ready to work with Battalion

(*Alternative*). Assume that the Right Half Battalion carries out Company training from the 1st. to 31st. March, during that month the Machine Gun men of Left Half Battalion should be trained and in the same way when the Left Half Battalion carries out Company Training, the Machine Gun men of Right Half Battalion are trained.

In this case, the same training as in (a) should be carried out with the exception of such work as Bridging, etc., which would be done with Companies.

By this system, the Machine Gun Section and the Spare Section will be trained by the end of Company Training and ready to work in Brigade Machine Gun Training.

In either case, the following course of training is suggested :—

### *1st. Week*

Mechanism, Packing Gun in Limber, Judging Distance and use of Mekometer, Signals and Semaphore, Duties of each man in Field, Visual Training. *Lectures* : Powers of Gun and equipment in Field.

### *2nd. Week*

Mechanism, Mounting and Dismounting Gun, Judging Distance and Range Finding, Signals and Semaphore, Visual Training, Packing Limber.

*Lectures* : Defects in Mechanism, Judging Distance, General Care of Guns.

### *3rd. Week*

Mechanism, Mounting and Dismounting Gun from Limber, Duties of each man in the

Field, Semaphore and Signals, Visual Training, Failures and Remedies, Filling Belts and cleaning and care of guns. *Lectures* : Tactical uses of Machine Guns.

*4th. Week*

Mechanism, Failures and Remedies, movements in the Field with Limber Horsed, Semaphore and Signals, Table C., Provision of Cover and making Gun Pits, Laying Gun for Night Firing, Use of Ground, Knowledge of Spare Parts and where kept and carried.

At the conclusion of each week an Examination should be held on the week's work.

Two men daily should be instructed in Grooming and Horsemanship, etc., also two men to assist man in charge of gun in his work.

Additional instruction should be given in Map Reading, Observation of Fire, Ground Scouting and, to a certain extent, each man should be able to take the place of the Driver.

The following Signals are useful :—  
(Semaphore)

- A. Muzzle attachment required.
- B. Ammunition required.
- C. Correct elevation.
- D. Shots going low.
- E. Shots going high.
- F. Shots going left.

- O. Shots cannot be seen.
- R. Shots going to right.
- L. Spare Lock required.
- F.B. Spare feed block required.
- W. Water required.

The following is one method of detailing each man with gun for a duty when working in the field :—

- No. 1. Takes tripod from limber and sets up.
- No. 2. Takes Gun from Limber and places on tripod when No. 1. is ready.
- No. 3. Takes four boxes of Ammunition from limber to position of Gun.
- No. 4. Acts as Ground Scout and observes fire.
- No. 5. Acts as Range Finder with other No. 5.
- No. 6. When necessary brings Pick and Shovel and Sand Bags, otherwise keeps up communication between gun and Limber.

No. 3 is also available for carrying messages.

No. 5 of each team will always carry the Mekometers.

In addition, the Officer and Sergeant would carry a small flag to place in ground at point where guns are to come into action. The Officer also carrying a Megaphone.

Signal for Action.—N. (Semaphore).

Signal for Limber up.—Close Signal.

## CONCEALMENT AND MEANS OF PROVIDING COVER

As the successful use of Machine Guns depends to such a large extent on their invisibility, both going into and when in action, perhaps a few words on this subject will be useful here.

(i). It will be found that with frequent use certain parts of the gun and tripod become shiny and so liable to catch the sun and give away the positions of the guns.

This may be overcome by frequent painting of the gun and tripod. I found that the guns are most invisible when painted in stripes green, grey and a brown red, the front of the barrel casing being grass green colour. Such parts as elevating and cross-head joint pins, traversing handles, can be covered either with leather or bound with string.

(ii.) In bringing the guns into action, I have found that with careful practice, the gun on tripod can be dragged along the ground by two men, this only being done when close to the position the guns are to occupy.

(iii). At times it is of advantage to make use of boughs of trees such as fir, pushing these on in front of gun.

(iv). When moving the limber in the vicinity of the enemy, especially along roads, drivers should be made to dismount and lead their horses.



# TABLE "C." MACHINE GUN COURSE. (ANNUAL).

## CAVALRY AND INFANTRY. (REGULAR ARMY). PART I.—ELEMENTARY.

No.:	DESCRIPTION OF PRACTICE.	TARGETS.	DIST. IN YARDS.	ROUNDS PER MAN.	INSTRUCTIONS FOR CONDUCT OF PRACTICE.
1.	Grouping and Application.	Band 3½ ins. deep.	30	20	Ranging Fire 20 seconds allowed.
2.	Traversing.	" " "	30	30	A band 3 ins. long will be swept with traversing fire in 30 secs.
3.	Traversing and Application.	Diagonal Band 3½ ins. deep.	30	30	A band 36 ins. long, sloping about ¼ will be swept with traversing fire in 45 secs.
4.	Searching.	Band 12 ins. deep.	30	20	The gun will be elevated and depressed while firing.
				Total ..	100

## PART II.—INSTRUCTIONAL.

5.	Grouping and Application.	Screen 1 yd. high and 10 ft. wide.	400	30	Ranging fire 15 seconds allowed.
6.	Grouping and Application.	Screen 1 yd. high and 10 ft. wide.	600	30	" " " "
7.	Traversing.	Collapsible.	400	30	An extended line 20 yards long will be swept with traversing fire in 30 secs.
8.	"	Screen 1 yd. high	600	30	Traversing fire 30 secs. allowed
9.	Rapid.	10 ft. wide.	800	30	Fire will be concentrated, 10 secs. allowed.
10.	Timed Application.	Collapsible.	800 to 300	60	Gun to be moved forward, and brought into action at 4 different distances. Time required for moving 100 yds. and making fire effective, to be noted.
				Total ..	210

## PART 3.—FIRE DIRECTION PRACTICES.

A few bursts of ranging fire will be delivered at various ranges under direction of Officers, for practice in applying fire. The distances should be not less than 600 yards, and the results of the fire should be signalled from the target position. Collapsible targets should be used, and not more than 200 rounds in all should be expended.

## PART 4.—FIELD PRACTICES.

All ammunition remaining in hand should be expended in tactical exercises or problems, in accordance with the principles laid down for field practices fired with the rifle. The firing should not take place at distances less than 600 yards, if range accommodation is available.

## SPECIAL INSTRUCTIONS FOR TABLE C.

Two non-commissioned officers and 12 men per battalion will be trained in firing the gun, 500 rounds being allotted for the practice of each firer.

Non-commissioned officers and men who show a high standard of proficiency, will not be required to fire through the whole of the Elementary and Instructional Practices, the

ammunition saved being fired subsequently in Field Practices.

The standard, in grouping and application practices, will be 75 per cent. of hits on a  $3\frac{1}{2}$ -inch band at 30 yards, and 50 per cent. of hits on a screen one yard high at 400 yards.

Details of practices may be varied by order of commanding officers according to local range facilities. For the elementary practices, the necessary targets should be placed on a screen measuring 6 feet long and 6 feet high.

In traversing practice, fire should be directed at extended lines of figures  $3\frac{1}{2}$  inches high ; traversing fire will consist of a series of small groups, the gun being slightly traversed between each group. Bands of coloured paper  $3\frac{1}{2}$  inches deep should be placed above these lines of figures, and the sights should be elevated so that the bullets will strike these bands. For practice 3, the band should be sloped at the same or slightly greater angle than the figures.

The ordinates of the trajectories for various ranges at 30 yards from the muzzle, measured from the feet of the lowest line of figures, should be marked on the edge of the target, so that it may be used also as a long range sighting target.

All correction in Part 2 should be made by observation ; there will be no signalling from the target position during the practices.

It is desirable that all practices in Part 2 should be fired from behind cover.

Targets should be placed on the face of the stop butt, or in the open if safety conditions permit.

Collapsible targets may be "iron falling," or figure targets representing a firing line, machine gun, or other service objective.

---

It will also be found of great assistance if a D.P. Gun can be obtained for teaching mechanism, and an old lock for stripping purposes. It is only quite recently that the second gun or mobilization charge has been available for firing blank ammunition.

At the end of each week during the training, the officer should have a short Test, to note progress of men ; in the earlier stage to consist of questions of Mechanism, etc., and later on in Rapidity of Movement in Field, Moving gun into action over different distances, which should be gradually increased.

By the end of the course a team should be able to get gun, ammunition, &c., out of limber and be in action 150 yards away in under two minutes, each man being in his correct place.

A weekly inspection of all spare barrels and parts is of importance.

## CHAPTER IV

### BRIGADE TRAINING

This may be done in one month or two, being dependent on whether Battalions send complete sections, or only one team. In either case the course should consist of the same work. It is assumed the Battalions have trained the Sections in mechanism and that it rests with the Brigade Machine Gun Officer to train the teams to work as a battery and in pairs.

The first steps to be taken are to arrange for a uniform system of organization, &c., without, of course, interfering with any special arrangements made in Battalion training of Sections. The course should consist of the following :—

#### *1st .Week*

Short revision of mechanism, &c., to see that men have not forgotten this.

Working of gun as a Battery and movements in the Field.

Drill work by signal.

Uses of cover and special training for drivers.

Judging distance and signals.

Moving guns into action and taking up of alternative positions—singly and in pairs.

Examination in mechanism and packing of gun in limber.

*2nd. Week*

Movement of guns in Field: working in pairs and massed.

Entrenching and type of Gun Pit.

Communication in Defence.

Range Cards and laying guns for night firing.

Practice in field with casualties.

Simple scheme of attack.

Action to be taken if surprised by Cavalry.

*3rd. Week*

Practice use in Field in Attack and Defence, massed, in pairs, and singly.

Moving by concealed line of approach, and movements of gun over obstacles.

Reinforcing special points in an attack; working with Infantry if possible.

Judging distance, and range finding.

Firing guns from sand-bags.

Moving guns quickly in Field with only Nos. 1 and 2.

*4th. Week*

If possible be attached to Companies at

special training and work with them, carrying rations, &c., for Sections.

Use gun in every phase of tactical operations.

Practice N.C.O.'s in taking charge of guns.

## LECTURES

- |           |   |   |
|-----------|---|---|
| 1st. Week | } | (1). Organization for guns when massed, in fours or pairs.        |
|           |   | (2). System of Signals for movements at drill and in Field.       |
| 2nd. Week | } | (3). Machine Gun in Attack.                                       |
|           |   | (4). Machine Gun in Defence.                                      |
| 3rd. Week | } | (5). Military History applicable to Machine Guns (with diagrams). |
|           |   | (6). First Aid to Wounded (by Medical Officer).                   |

In addition to the above, it is advisable to have a daily inspection of each gun before and after work, and once a week an inspection of all barrels.

Special Instruction for all N.C.O.'s, Ground Scouts and Drivers should be carried out.

A short daily practice for selection and indication of targets with judging distance.

The following signals, &c., work satisfactorily :—

## DRILL, &amp;C.

(In each case the whistle being used before a signal is given).

To move off by single limbers, the "Extend" Signal and "Advance." Guns always move off from the right.

To increase front from single limbers to pairs, the "Advance" Signal.

To increase from pairs to fours, "Advance" Signal again.

The limber or limbers moving up, always to go on the right.

Action :—Whistle and "N."

Limber Up :—"Close" Signal.

The "Wheel," "Incline" and "About turn" as for Infantry. The leading Gun should always be No. 1 and so on.

All movements when possible, should be done by signal and all noise and shouting avoided.

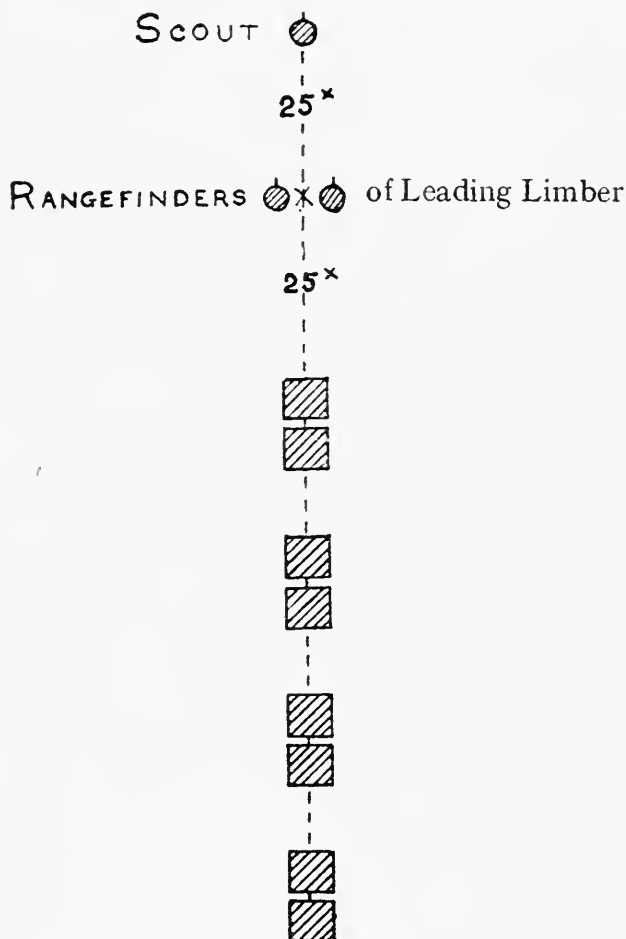
Each machine gun Officer should carry a small flag. For moving into action this is most useful. The Officer or N.C.O. having selected position guns are to occupy, places flag in the ground and signals "Action." Limbers are then brought up to some position under cover and guns carried up to position of flag.

This procedure works well with sections massed in fours.



Position on Line of March massed or in pairs.

(Distances being dependent on circumstances and country).



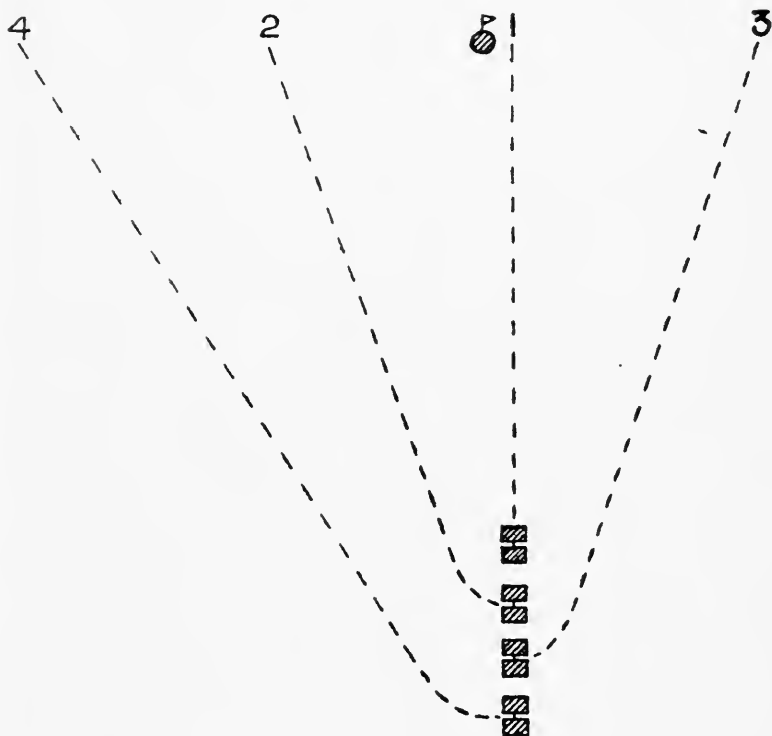
The Officer chooses position and places flag.

The Ground Scout on seeing signal for action, notes position of flag and signals back to limbers, which are brought up at trot to position under cover, Guns are taken out and limbers under discretion of N.C.O., either remain where they are, or proceed to position under cover, (dependent on ground and to be left to the judgment of the N.C.O.)

On seeing the " Action " Signal, the Range-finders of leading gun (No. 1) double to position in rear of or close to flag and take ranges of target under cover.

The ground scout of each gun doubles to Officer to ascertain target and sometimes range to be used.

Each N.C.O. with guns chooses position for them on this rule (with due regard to cover, etc.:—

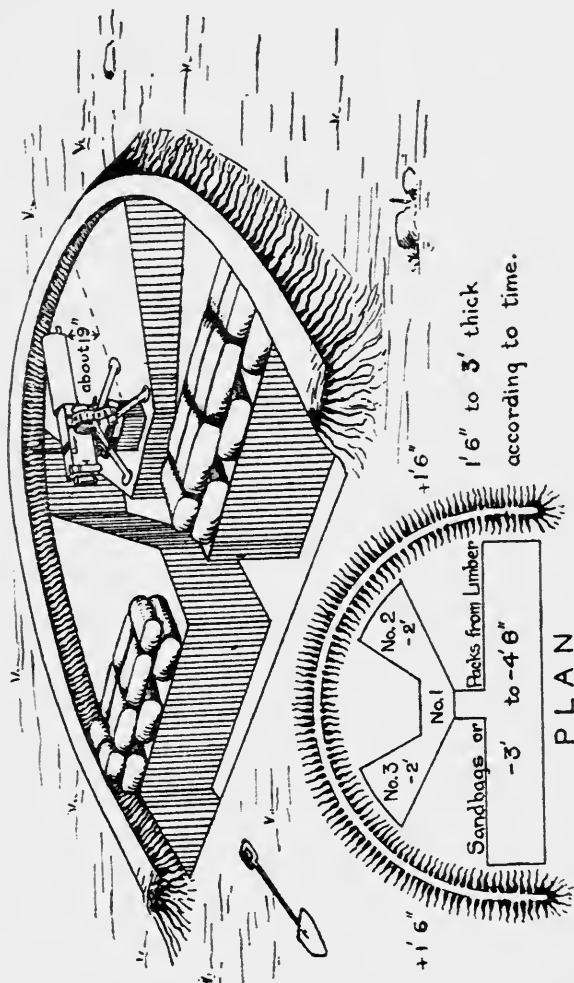


The Ground Scout of No. 1 Gun will, after communicating target to his team, place himself by the Officer and is available for carrying messages, &c.

The other men of teams work as when with single guns. Practice in passing of messages and control of fire is most important, and when required to do so by word of mouth, a Megaphone should be used by the Officer.

N.C.O.'s with guns, seeing Officer hold up his hand after blowing whistle listen for message (as change of target or range) and on receipt of message drop hand to side.

TYPE OF GUN PIT FOR DEFENCE.



This can be made in  $1\frac{1}{2}$  hours by six men in moderately easy soil—it provides excellent cover, is invisible at 500 yds., holds all the team for gun as well as ammunition, spare parts, overhead cover can easily be provided, and the gun can be fired to either flank, simply being swung round and fired by No. 2 or 3, as the case may be.

When opposed to Artillery, all men can be withdrawn into rear trench and, if necessary, the gun and tripod also.

Communicating trenches will be found useful when guns are massed especially in a prolonged defensive action. Alternative positions can be arranged for with a covered line of approach.

Ranges should be taken beforehand and a range card supplied to each gun.

*Note* :—The Massing of Guns can only be possible and advantageous on certain occasions.

At the same time, by brigading guns, it is much easier for the Commander of the Brigade to allot guns to certain points or battalions, or, as may often occur to keep all machine guns as a mobile reserve under his own hand. And consequently, I strongly advocate the massing of guns always, with the alternative then of detaching a pair or more to certain units.

In so strongly advocating the massing of machine guns I do not advocate their use in action en masse but refer rather to their

organisation and movement before an action.

It will be found as a rule that Battalion Commanders have sufficient command in their eight Companies with the first line transport, without the necessary disposal of two machine guns in an action—doubtless it has often been noticed that insufficient use has been made of machine guns by Battalion Commanders on some occasions, and possibly in making the dispositions for the companies of the Battalions, the machine gun section has been somewhat neglected.

I quite agree that it would be the exception for 8 machine guns to be massed in an action but consider that if this command were placed under the control of one officer greater results would be obtained by them. It would be easier to disperse guns when organized in masses of say 8 than to collect guns from Battalions of a Brigade when required to complete a formidable and mobile reserve.

## CHAPTER V

### (TACTICAL NOTES FROM OFFICIAL TEXT BOOKS)

As these are found in different books, they have been placed together in one chapter. The information contained in the Handbook of the Maxim Gun is not embodied in this.

### INFANTRY TRAINING, 1905 AMENDMENTS (A.O., May, 1909)

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#### MACHINE GUNS

##### 167 (A). *General Characteristics*

1. The machine gun possesses the power of delivering rapidly from a narrow front a volume of closely concentrated fire which can be controlled easily, be turned readily in any desired direction, or be distributed by traversing.

2. The effective range of machine guns is the same as that of the rifle, they are therefore not suited for employment in place of artillery. On the other hand the effect of machine gun fire at effective infantry and close infantry



ranges is very great, and at close infantry ranges it may, with favourable conditions, be annihilating. Machine guns are very suitable for the development of covering fire within the limits of effective rifle range. They can accompany the troops to which they may be attached over any country.

3. The action of the mechanism is liable to temporary interruption by jams. Machine guns should not therefore be used singly under normal conditions. They are organized in sections of two guns which should rarely be broken up.

4. Machine guns are essentially weapons of opportunity. The expenditure of ammunition involved and the nature of the mechanism make long periods of rapid fire unsuitable. The power of the gun is best used to develop unexpected bursts of fire.

167 (B). *The organization and training of infantry machine gun sections*

1. The strength and composition of a machine gun section is shown in War Establishments. An infantry machine gun section is an integral portion of an infantry battalion, but two or more sections may be brought together by the brigade commander and used under the command of a brigade machine gun officer.

The two non-commissioned officers and twelve privates shown in the establishment will be trained as first class machine gunners. Two non-commissioned officers and twelve men will be trained, as opportunity offers, as second class machine gunners to replace casualties among first class machine gunners.

2. A subaltern officer, other than the assistant adjutant, will be selected in each battalion to command and train the machine gun section, under the orders of the commanding officer. Should a brigade commander desire to train the machine guns of his brigade to act together when massed, an officer, who is not the machine gun officer of one of the battalions of the brigade, may be selected to supervise the firing practice and to conduct the brigade training of machine gun sections.

3. Officers, non-commissioned officers and men detailed for machine gun training should be changed as little as possible ; the two non-commissioned officers and 12 men trained as first class machine gunners will fire the practices prescribed in the Musketry Regulations with one of the companies of the battalion,\* but will at other times be at the disposal of the machine gun officer for instruction.

\*They should fire with their own companies if it can be arranged that they complete the various parts of the range practice on approximately the same date.

4. Details as to the mechanism of the gun, and the drill of machine gun sections are contained in the hand-book of the gun. Instructions as to the course of firing are contained in the Musketry Regulations.

5. The preliminary training, which may be carried out in the neighbourhood of barracks, will consist in instruction in the mechanism of the gun ; in the drill and methods of laying, ranging and firing ; in packing and unpacking with limbered wagons.

6. As soon as the men of a section are thoroughly conversant with the mechanism, are able to recognise without delay the cause of any failure and to remedy it at once, and can drill and handle the gun with precision, their further training will be carried out in open country away from barracks. During this training the sections should be practised in bringing the gun into action ; in fire control ; in laying and ranging in every variety of country ; in utilising natural cover when advancing into action ; and in constructing cover from both view and fire. The men should also be trained in range finding, judging distance, and in the use of field glasses.

7. When the section is proficient in these branches of training, the commanding officer will arrange for it to be trained with one or more companies which have reached the more advanced stages of company training in order

that it may be practised in co-operating with other troops and in dealing with such situations as would confront it in war. The periods of preliminary training should be arranged so that the section may be ready for this training, without hurrying through the more elementary work. To enable this to be done it will usually be necessary to begin the preliminary training during the winter training season.

167 (C). *General principles of the employment of infantry machine guns*

1. The normal duty of the infantry machine gun in war is to assist infantry in every way by its fire, but it may be given an independent role at any time, if the tactical situation makes it advisable to do so.

2. The effective use of a machine gun depends largely upon the skill with which it has been brought into action. Surprise and concealment are very important factors in its employment ; for the effect of the gun is much increased by sudden bursts of fire from concealed positions. The tripod mounting makes it possible to take advantage of small features of the ground to obtain cover and to escape an enemy's observation. In order to develop the power of the gun to the utmost the fullest use should be made of natural and artificial cover.

3. The depth of the beaten zone of the machine gun is small as compared with that of collective rifle fire. This makes the effect of small errors in sighting for elevation proportionately greater. A section of machine guns cannot therefore be relied upon to make its fire effective when first opening fire, at distances beyond about 1,000 yards. If observation of fire is possible, elevation may be rapidly corrected, and the fire of the two guns may in that case be very effective up to 2,000 yards, or up to the limit of observation. If there is no observation it will be necessary to employ several guns and expend a large quantity of ammunition in order to obtain adequate assurance of effect beyond about 1,000 yards.

4. By massing the machine guns of a brigade the assurance of fire effect at ranges beyond 1,000 yards, is increased, and it is easier to control and direct fire. At shorter ranges massed machine guns may form a conspicuous target and the control of more than two guns then becomes difficult. Occasions will, however, often arise when the massed guns of a brigade can be brought into action in a well-concealed position within the limits of effective rifle range. Under such circumstances massed guns may produce great effect both in attack and defence.

5. The general considerations which govern

the selection of a target for machine guns are, its tactical importance, its range, and its vulnerability.

Machine guns should seldom engage artillery with direct fire beyond effective rifle range, for in such circumstances superiority of fire will always rest with the artillery if the machine guns are located. Within effective range machine guns, if concealed, should inflict considerable loss on artillery, while oblique fire may be usefully employed up to the limits of long rifle range.

Engagements with thin lines of skirmishers should be avoided unless the range is accurately known, as the risk of disclosing the position of the gun and the expenditure of ammunition involved will rarely be justified by results.

6. It is very important that fire should not be opened until there is a reasonable probability of obtaining the desired result. A section commander must have a thorough knowledge of the capabilities of his guns to enable him to decide when he is justified in opening fire.

7. Machine guns should as a rule only open fire upon targets which are sufficiently large and dense to promise an adequate return for the ammunition expended. Special circumstances may, however, warrant the opening of fire upon less favourable targets. When a machine gun commander has decided to open

fire, the ammunition necessary to secure the results sought should be expended without hesitation.

8. If there is no satisfactory indication of effect and, no special justification for firing at long range exists, it will usually be better to withdraw from action and to await opportunities for effective intervention.

9. A machine gun commander should be given definite orders as to his action, but should be allowed full liberty within the limits assigned to the commander of the body of troops with whom he is co-operating, in carrying out his orders. He should be kept informed of all changes and developments of the situation which may affect his action. Initiative and enterprise are essential to the effective handling of machine guns.

10. Machine guns will usually be sufficiently protected by the dispositions of the troops with whom they are acting. Should a machine gun commander find himself in an exposed position, he should consult the nearest infantry commander, who is responsible for providing a suitable escort, if in his opinion one is necessary.

11. When a machine gun is in action only those numbers required to work the gun should be with it. Spare numbers, when not employed as rangefinders, ground scouts, ammunition carriers, or on similar duties, should be

in covered positions in the vicinity. Groups of men close to machine guns do not facilitate the working of the gun, and make a vulnerable target.

The limbered wagons will be unloaded in positions where they are screened from the enemy's fire and observation.

The commander of the machine gun section will select a covered position for his small arm ammunition cart, as close to his guns as possible. (*See Section 174 Inf. Training.*)

#### 167 (D). *Choice of fire positions*

1. Reconnaissance is of special importance in the handling of machine guns. Before bringing his guns into action the brigade machine gun officer, if the machine guns are brigaded, or the battalion machine gun officer, if the sections are working independently, accompanied by range takers and orderlies should usually be well in advance of his guns, where he can observe the action of the body of infantry with which he is co-operating. He should carefully reconnoitre suitable fire positions and make all preparations for bringing his guns rapidly into action. During this reconnaissance the machine guns should normally be placed in concealed positions. In any case they should not follow the machine gun



commander so closely as to expose their movements. Alternative positions to which the guns may be moved to meet changes in the situation or to avoid artillery fire should always be prepared.

2. The choice of a fire position must depend upon the tactical requirements of the situation, and upon the object in view ; for example it must depend upon whether it is desired to use covering, enfilade or flanking fire, or to act by surprise.

A commanding position is favourable for the development of covering fire, while for other purposes the gun should be sited as low as is compatible with obtaining the necessary field of fire.

3. A clear field of fire, facilities for observation, a covered approach, concealment and cover for the guns and their detachments, and facilities for ammunition supply, are advantages to be looked for in a good fire position, but one position will rarely unite them all. In arranging for the concealment of the guns it is important to consider the background. The neighbourhood of landmarks and the tops of prominent features should be avoided.

4. Their power of all round traversing and their great effect against deep targets make machine guns specially suitable for position on a flank, whence they can bring enfilade fire to bear. A position in the firing line is rarely

suitable, as the fire of the guns may be masked and the enemy's fire drawn on the firing line.

5. The interval between guns in action should be as large as is compatible with effective control, but the front occupied by the massed guns of a brigade should rarely exceed 150 yards.

### 167 (E). *Machine Guns in Attack.*

1. Since machine guns are unsuited for maintaining a continuous fire, they will usually best assist the infantry by withholding their fire during the earlier stages of the battle so as to be able to intervene at more critical periods. Machine guns allotted to a protective detachment will, however, always be employed so as best to assist the detachment in its special duties. (Field Service Regulations, Part I, Chapter V.)

2. It will depend upon the general situation whether the machine guns should be placed under the control of the brigade machine gun officer or left with the battalions to which they belong. When the facilities for concealment and control at effective range are good, and the brigade is engaged in a decisive attack, the best results will usually be obtained by unity of command. By a timely concentration of

fire machine guns may thus be the deciding factor in the struggle for superiority of fire.

When control is difficult, or when the brigade is extended over a wide front, it will usually be better to leave guns with their units.

3. It will often be advisable to employ both methods and to leave their machine guns with the battalions which are first extended, while those of reserve battalions are placed under the command of the brigade machine gun officer.

4. Although machine guns can move with deployed infantry under fire, they should rarely attempt to keep pace with attacking infantry. When they have gained a position from which they can effectively support their infantry in the struggle for fire superiority and in the assault, they should only be moved for good and sufficient reasons. The difficulties of ranging and of concealment on the move, usually outweigh the advantages of decreasing the range.

5. Machine guns will usually find opportunities for employment in the attack in assisting the advance of their infantry by means of covering fire ; in protecting attacking infantry against counter-attack or against cavalry ; in assisting the infantry in the fire fight and in preparing for the assault by sudden bursts of converging fire against the objective of the attack. They will also be of value in securing

localities which have been seized during the advance and can assist local reserves in acting as points of supports to the attack.

167 (F). *Machine Guns in defence*

1. In defence, as in attack, the fire of machine guns should usually be withheld until the more critical stages of the battle. Premature opening of fire is liable to expose the position of the machine guns to the enemy's artillery.

2. Machine guns may either be dispersed to command approaches, defiles, exits from woods, &c., by which the enemy may advance, to occupy advanced posts, and to bring enfilade fire to bear upon salients and upon the ground in front of weak parts of the position, or they may be massed and employed under the orders of commanders of sections.

3. When the guns are massed the alternative positions Sec. 167 (D) 1 should be such that the firing line can be assisted during the crisis of the fight, and the advance of local and decisive counter-attacks can be covered and prepared. When covered approaches can be provided, massed machine guns should usually be withdrawn, after they have achieved their immediate object, and should await another favourable opportunity for action.

FIELD SERVICE REGULATIONS PART I.  
(*Operations*) 1909

(Chapter I. Para. 7.):—The machine gun possesses the power of delivering a volume of concentrated rifle fire that can be rapidly directed against any desired object.

Rapid fire cannot be long sustained owing to the expenditure of ammunition involved, and it is therefore necessary that the movements and fire action of these weapons should be regulated so as to enable them to open fire immediately a favourable opportunity arises.

Surprise is an important factor in the employment of machine guns, which should be concealed, and whenever possible provided with cover from fire. The massing of machine guns is likely to attract hostile artillery fire. For this reason it is usually better to employ them in pairs in support of the particular body of troops to which they belong. When an overwhelming fire on a particular point is required, it can be provided by concentrating the fire of dispersed pairs of guns. The guns of two or more units may, if required, be placed under the command of a specially selected Officer and employed as a special reserve of fire in the hands of the Brigade Commander.

Machine guns are best adapted for use at effective infantry ranges, but when good cover

from view and fire exists, they may be usefully employed at close infantry ranges.

(Ch. II. Para. 77).—Machine guns with outposts may be employed to sweep approaches and to cover ground which an enemy in advancing may be compelled to pass or occupy.

(Ch. VII. Para. 105).—Machine guns will be specially valuable in bringing a sudden fire to bear from such positions (*i.e.* in attack, tactical points gained as small wood, buildings, &c.) both in order to cover a further attack and to assist in defeating counter attacks. Machine guns can normally support an attack most efficiently from well concealed positions, provided with good cover and within effective infantry range of the enemy, occasionally when good opportunities for a concealed advance present themselves, they may be established within close infantry range of the enemy.

(Ch. VII. Para. 109). (In Defence).—Machine guns are best utilised to sweep with fire exposed spaces, which an enemy must cross, or roads and defiles through which he must advance, and will also be of service to flank salients or advanced posts and to assist in protecting flanks.

(Ch. VIII. Para. 115. Siege Operations).—The generally accepted principle in the design of modern fortresses is that the assault will be repulsed by the fire of infantry, quick firing

artillery and machine guns from permanent works protected by deep ditches.

(Para. 120).—The outposts of a section which is maintaining a close investment should be about one quarter of the total infantry allotted to the section, together with a proportion of artillery and machine guns.

(Para. 122—Direct Attack).—Except when it is possible to overwhelm a work by greatly superior force, a preliminary bombardment will usually only serve to announce to the enemy that an attack is impending, but artillery, machine guns and infantry should invariably be brought into entrenched positions from which the advance of the assaulting Columns can be covered and supported if necessary.

(Para. 124—The Regular Siege).—Machine Guns and rifle fire from covering troops detailed specially for that purpose, will be directed on the works to be attacked.

(Ch. IX. Para. 132—Night Marches).—When a Column is formed of all arms, mounted troops, Artillery and machine guns will usually march on the least exposed portion of the column.

(Ch. X. Para. 146—Rearguard).—Machine guns may be usefully employed with a Rear-guard.

(Para. 149).—Against an enemy who fights outside stockades, machine guns are very

efficacious, and in any case against all uncivilized people a sudden burst of fire from these is often most paralysing.

(Para. 154—Protection at rest).—Machine guns should be placed so as to enfilade the front.

. . . . .

The following are a few additional notes found in the New Musketry Regulations, Part I. 1909.

Ch. II. para. 141.—“ A record of ammunition expended in Machine Gun Practice will be kept by the Machine Gun Officer in the ‘Machine Gun Register and Diary,’ Army Book 107.”

Ch. V. Section 71. — “ Test of Range Takers.”

Para. 340.—“ 1st Class Machine Gunners will not be included in Battalion or Brigade Tests, their training in range finding will form a part of their Machine Gun training and they will be expected to reach a very high standard of efficiency.”

Ch. VI. para. 410.—“ Machine Gun detachments may fire either with their Companies or in separate parties. In the latter case their performances will be recorded in the same manner as those of casuals.”

Ch. IX. para. 636. 1. Army Form B. 2050. —“ This form is a register used for Machine Gun practice. From it the performances of



each firer are to be transcribed into Army Book 107."

11. Army Form 107.—This book contains a page for recording the performances and qualifications of each man of a Machine Gun detachment (A.F. B2050) together with the Machine Gun Officer's Diary of ammunition expended.

Para. 638.—"The depth of the zone beaten by 75 % of shots fired from a Maxim Gun, measured as described in para. 181, may be taken as 150, 70, 60, and 50 yards respectively at 500, 1000, 1500, and 2000 yards and the lateral dispersion of the cone of fire at the same ranges as 4, 8, 13, and 19 feet."

Para. 639 —"It is, however, evident that greater or less dispersion of the bullet cone may be obtained under varying conditions of platform, worn barrels, wear of gearing or methods of firing.

"Detachments should therefore compile their own records of grouping and traversing. The sighting peculiarities and normal grouping of guns will be recorded on labels attached to the guns and revised from time to time."

Para. 640.—The course of firing is laid down in Table C. on page 27 (in this book).

"The allotment of rounds to individuals may be varied in any way, provided that the required number of 1st Class Machine Gunners are exercised and classified."

Para. 641.—“The number of 1st Class Machine Gunners should never be allowed to fall, even temporarily, below four per gun.”

Para. 642.—“The composition and classification of detachments will be determined by Commanding Officers.”

Para. 652. Table C. (Special Reserve).—“Machine Gun detachments of the Special Reserve will fire practices 1, 2, 3, 5 or 6, 7 or 8, 9 and 10 (30 rounds only at two distances).”

Para. 653. Table C. (Territorial Force).—“Non-commissioned Officers and men of Machine Gun Sections of the Territorial Force will fire practices 1, 2, 3, 5 or 6, 7 or 8, 9 and 10 (30 rounds only at two distances).”

“The ammunition allowed will be 200 rounds per non-commissioned officer and man.”

Para. 659.—“Machine Gun Courses will be held :—

- (1). Regular Forces—For Officers and Non-Commissioned Officers.
- (2). Special Reserve and Territorial Force :—For Officers and non-commissioned Officers other than the regular establishment and permanent Staff.
- (3). These classes will be held in continuation of those referred to in para. 605 ; re-attendance at the School of Musketry for instruction in Machine Gun requires special

authority from the War Office in the case of Officers and non-commissioned Officers of the Regular Army and Special Reserve."

*Note* :—For the actual course (Table C) see page 27, ch. III.

## ADDENDA TO CHAPTER V

### OPPOSING LANDINGS

This point does not appear to have been touched on in any of the Official Handbooks. As it would appear to be one great opportunity for the use of Machine Guns perhaps it is not unworthy of mention.

Firstly it is more or less a byword that the Machine Gun should be a weapon of surprise and opportunity.

One of the greatest difficulties this arm has to deal with is the estimation of range and consequent accuracy of fire at the object fired at from the moment of opening fire. As a rule in a land fight it would not be easy to observe the strike of the bullets and effective results could only be obtained by noting the action of the enemy fired at or by the use of combined sights.

These points are mentioned in order to show of what great advantage Machine Guns might be when used to oppose landings and firing at a target on the water.

In this case the strike of the bullets could

easily be seen at once and great accuracy and fire effect should be at once obtained.

Again the Machine Gun and its detachment can easily be hidden in comparison to 40 men (to which I think the fire can be said to be equal).

When used under these circumstances dispersion of guns would appear to be the most suitable form of use. As Machine Guns must appear such a favourable weapon for this work, it would seem to be a great factor if their numbers were increased, at any rate amongst the units detailed for Coast Defence.

## CHAPTER VI

### (NOTES ON TACTICS FROM FOREIGN ARMIES)

In the Russo-Japanese War, machine guns were used chiefly by the Russians on the defensive, and by the Japanese in the attack, though at the commencement of the War, their extensive use by either side was not conspicuous.

The Japanese appear to favour the pushing forward of machine guns with the firing line on some occasions, and especially their rapid movement to any position captured by their own Infantry with a view to making the position more secure. An example of this may be seen in the battle of Mukden on March 1st., 1905, when machine guns were pushed forward to a captured position on Sand Hill, S.E. of Likakaho and constructing cover there, secured the position.

In pursuit, they speak strongly of their use to add to the discomfiture of a retreating foe, owing to their mobility. An example was seen on 10th March, 1905, when the fire of a Machine Gun Section of 1st. Japanese Division disturbed hostile Infantry and Artillery near

Ridiashi and Giroupo. Laid at a range of 750 yards, it opened fire on columns of infantry and cavalry retiring, and inflicted heavy loss. They are of opinion that in pursuit, machine guns should work massed, or at least not less than four together.

The general lessons tactically from the Japanese point of view are :—

“That machine guns will be increased in number and be improved in manufacture.

That they will not alter modern tactics as they do not supplant rifles or guns and only increase their effectiveness at certain moments and phases of an action.

With an increase in number their moral effect will be reduced.

Their value will depend on whether they are used in accordance with sound principles and whether the effect obtained can be made proportionate to the amount of ammunition expended.”

Generally speaking, the Japanese and Germans favour the massing of guns. The latter are of opinion, too, that machine guns should be employed at close ranges and that they are of great use in the attack—that after the preliminary engagement they should be as much as possible retired from under fire and be held for subsequent employment—that they form a mobile reserve for the O.C. of a force.

On the defensive, detached posts should be provided with machine guns.

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The following are some of the instances of their use in the Russo-Japanese War :—

- (1). Massed in attack at Liao Yang.
- (2). Massed in defence at Liao Yang under Capt. Sourine.
- (3). Detached in defence at Chokoshai.
- (4). Moral effect "Fort No. 8" when a Japanese General had to lead the attack against them in person.

## TACTICAL RESUME

### *(In Attack and Defence)*

The main features are :—

The avoidance of premature disclosure of position.

Perpetual readiness to seize any opportunities that may occur.

Sudden outbursts of intense fire rather than a protracted slow fire.

Fire directed on targets having depth rather than on shallow skirmishing lines.

Concealment.

Care and artifice to be always used to occasion surprise and reduce casualties.



## METHODS OF EMPLOYMENT GENERALLY

In attack delivery of covering fire from a flank or from high ground in rear during infantry advance or prior to assault.

Concentration of fire on any particular point in enemy's line.

To break up a counter attack and prevent movement of enemy's Reserves.

If working on flank of the Infantry, must be secure against surprise.

To be always on the look out for opportunity of enfilade fire.

To distract enemy's attention from a turning movement, guns would usually be used in pairs in the attack.

On occasions guns might be pushed forward into the firing line to secure points gained by infantry and to be ready to open fire on retreating enemy, or guard against counter attack.

Look for opportunities of surprising artillery, but when once located by that arm, retire guns.

In attack on fortresses guns can be trained on breaches made by day to prevent their being repaired by night—may be used against search-lights.

## IN DEFENCE

May be massed to hold a section of defence.

To protect flanks.

In reserve with positions selected and marked.

To defend ditches and cover defiles, &c.

To flank ditches, walls and obstacles.

Support counter attack.

Sweep rear angles.

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(The organization and uses of machine guns by most foreign powers can be seen in the "Report on Foreign Manœuvres," 1907, but the information therein is confidential and therefore cannot be embodied in this paper. At the same time it is very interesting and makes a useful lecture.)



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